CRUo
LED - Recessed Cleanroom Luminaire with Overlapping Doorframe

LEVITON® | Certolux

Project:	Catalog:	Type:
Notes:		

Product Description
The CRUo series by Certolux is a recessed luminaire that is certified IP65 and ready for ISO Class 3-8 cleanrooms. The overlapping door seals to the ceiling and housing, completely covering the fixture flange. It is triple gasketed and listed for wet locations. The mounting is universal for 1.0" to 1.5" t-bar grid and flanged installations. It is certified NSF2 food, splash and non-food zones.

Feature Options
- Plenum Access Panel
- Tunable White
- BIOS® SkyBlue®

Housing
Precision formed, seam welded, one-piece, hole-free construction. 20 gauge cold rolled steel standard. Rigid 18 gauge flange with welded and rounded corners for safety. Stainless Steel and Aluminum are available options. 5 Stage pretreatement and gloss white polyester powder coated after fabrication. ASTM B117 1000hr Salt Spray tested.

Door Frame
Overlapping one-piece 18 gauge cold rolled steel standard, optional types 304 or 316 stainless steel or aluminum. welded corners blended smooth. Countersunk flat head, stainless steel, captive fasteners with integral silicone o-rings. Door frame is removable, reversible, and hinged by stainless steel aircraft cables. Highly resilient and chemical resistant CertaSeal microcellular closed-cell gasket seals door frame to the housing and/or ceiling.

Lens & Lens Retention
Standard lens; Impact resistant 0.125" thick diffuse symmetric acrylic lens (DSA). Smooth external surface for easy cleaning. Sealed to doorframe with RTV silicone sealant and retained by continuous perimeter brackets. See order code for other options.

Gasket Systems
Triple gasketed: Lens: RTV 100% pure silicone seals lens to door. Door: Highly resilient and chemical resistant CertaSeal microcellular closed-cell gasket seals door frame to the housing and/or ceiling. Housing: Closed cell neoprene gasket provided to seal flange to ceiling. Door screws: Silicone o-rings with special sealing flat-head screws.

LED
LED board modules are high efficiency and closely regulated to maintain CRI, color consistency, lumen performance, and efficacy. Select from 3000K, 3500K, 4000K, and 5000K color temperatures with a color consistency of 3 SDCM, standard 80 CRI, optional 90 CRI. Tunable White CCT range is 2700-6500K. Lifetime L90 is greater than 60,000 hrs. Modules are field replaceable and commercially available. Optional amber and red LEDs arrays available alone or in combination with white LEDs. Tunable White and Bios SkyBlue® options are also available. See specific CRUo-Red & Amber spec sheet here.

Electrical
The standard electronic driver is constant current, programmable and dimmable to 1% using a 0-10V protocol. High efficiency (>85%) and low THD (<10%). Certified to FCC Part 15, Class A. 120-277Vac or 347Vac, 50/60hz. See "Options" for Lutron™ or DALI driver choices. Internal Emergency Drivers are serviceable from the room side unless otherwise noted. Each LED color is separately circuited.

Finish
5 Stage pretreatement and gloss white polyester powder coated after fabrication. ASTM B117 1000hr Salt Spray tested. Stainless Steel is available with a choice of brushed #4 polished finish or gloss white polyester powder coated.

Installation
Flange installation is supported by swing style mounting brackets. Bracket vertical range is 1.3-2.9 inches. Grid installation suitable for 1" and 1.5" T-Bar NEMA LE4 Type G ceilings. See ordering key for use with 2" T-Bar Grid systems. (option C57) Consult factory for compatibility with non-standard grid systems). Ambient operating temperture: -4°F (-20°C) to 104°F (40°C).

Listings, Certifications and Ratings
UL listed for wet locations under covered ceiling (CAN & USA, ANSI/UL1598 & UL8750). Recessed Type IC for insulated ceilings. NSF2 for Splash zone and non-food zones (See option X5 for Food Zone certification). IEC60529 IP65 (Certified dust-tight and resistant to jets of water). Cleanroom classified ISO3-8. EU GMP Grade A, Suitable for Biosafety BSL1-3. Compliant with CCEA requirements. Rated for 2500psi washdown conditions.

Warranty
5 year limited warranty. For complete warranty,

5YR Warranty

Approvals
c(UL)us LISTED · NSF® · ISO 3-8 · WET LOC · IP 65

Dimensions

Top View — A, B

End View — C, 4 ⅛"

Side View — D

Cutout — F, E
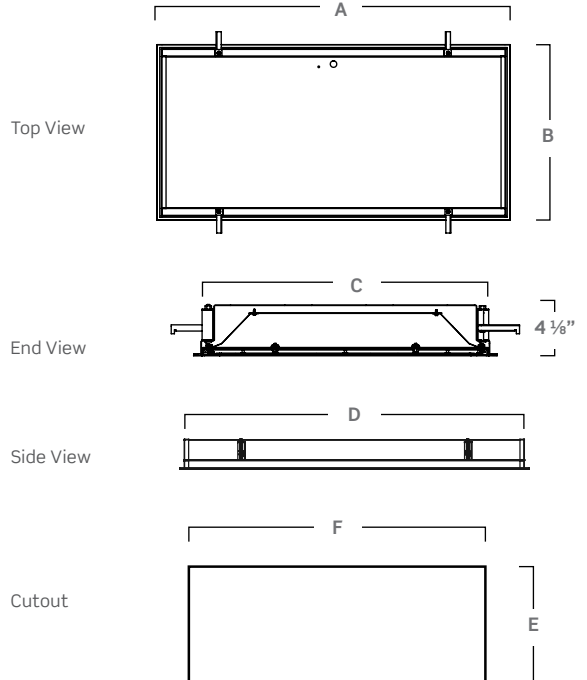
Dimensions (inch) & Weights							
	A	B	C	D	E	F	Weight
1x4	47.75	11.75	10.69	46.75	10.88	46.87	32 lbs.
2x2	23.75	23.75	22.69	22.88	22.88	22.88	29 lbs.
2x4	47.75	23.75	22.69	46.75	22.88	46.87	50 lbs.

Consult installation guide for exact dimensions.

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Project:	Catalog:	Type:

Notes:

Order Key

EXAMPLE: CRUo2x4A/PLED840K100LUNV-DSA

CRU	o	Door /	Hsg	LED		-		DSA

Series
Type
o - overlapping

Size
1x4
2x2
2x4

Material Door
P = 20 Ga. CRS Painted
A = 18 Ga. CRS Painted (Std.)
R = 20 Ga. 304 SS #4 Brushed
T = 20 Ga. 304 SS Painted
E = 18 Ga. 304 SS Painted
H = 18 Ga. 304 SS #4 Brushed
L = 18 Ga. 316 SS Painted
Q = 18 Ga. 316 SS #4 Brushed
U = .050" Aluminum Painted

Material Housing
T = 20 Ga. 304 SS Painted
P = 20 Ga. CRS Painted (Std.)
L = 18 Ga. SS #316 Painted
U = .050" Aluminum Painted

CRI
8 - (80+)
9 - (90+)

CCT
30K - 3000 K
35K - 3500 K
40K - 4000 K
50K - 5000 K
2765KT-2700-6500K**
(Tunable White)

Nominal Lumens

1x4 / 2x2
White
35L
55L
70L
100L

2x4
55L
70L
100L
120L
180L
240L

xxxLC= Specified lumens (must be <
max. value per size) Consult factory
for higher lumen options.

Voltage
UNV - 120-277V
347 - 347V

Lens Options

(DSA Standard)
DSA - Diffuse Symmetric Acrylic (Std.)
P11 - .156" Prismatic Acrylic
(pattern #19, inverted)
P13 - .125" Prismatic Acrylic
(pattern #12, inverted)
P15 - .140" Prismatic High Impact
Acrylic (pattern #12, inverted)
P103 - .125" Clear Polycarbonate w/
Diffuse inside layer
C/F - Consult Factory for glass and
other lens options

Options

Driver Options
B02   Dimming Addressable Digital (DALI)
B39   Emergency Bat. Pack -LED 10 Watts*
B39(ST) Emergency Bat. Pack, Self Testing - LED 10 Watts*

Wiring Options
V25   Radio Frequency Filter
V33   Two Circuit Switching
V55   Sealed wireway
V68   Microwave Occupancy Sensor
V114(BI01) Bios Dynamic Circadian LED + Bio-Dimming
V114(BI02) Bios Static Circadian LED

Construction Options
C21   Plenum Access Panel (Gasketed)
C57   Hsg. For 2" T-bar (Consult factory for compatibility)

Finish Options (Gloss White Standard)
F47   Gloss White Antimicrobial
C77   White Stainless Steel Door Screws

Accessories
M46   Continuous Row Mtg. -Not Required for Grid

Approval and Rating Options
X5   NSF Food Zone-Non-Contact

* Standard emergency battery pack options are internal and serviced from the room side. The exception is for some 2x2 wattages may have remote battery packs. Consult factory for details regarding 2x2 with emergency pack options.

** When Selecting 2765KT, if a tunable white-compatible control is not selected the luminaire will come standards with two sets of 0-10V wires for dimming and color tuning. For compatible control options please consult factory.

Performance Data
White LED Performance*

Size	Nominal Lumens Order Code	Lumens (4000K)	Watts	Efficacy
1x4	35L	3585	32	112
	55L	5538	51	109
	70L	7064	68	104
	100L	10100	96	105
2x2	35L	3564	31	115
	55L	5571	50	111
	70L	7035	65	108
	100L	10121	93	109
2x4	55L	5517	45	123
	70L	7085	59	120
	100L	10093	80	126
	120L	12096	99	122
	180L	18103	143	127
	240L	24102	198	122

Standard White

CCT	80 CRI					90 CRI				
	Lumen Factor	CRI	R9	Rf	Rg	Lumen Factor	CRI	R9	Rf	Rg
3000	0.95	80	-	-	-	0.77	90	-	-	-
3500	0.97		12	85	97	0.80		62	91	100
4000	1.00		10	84	97	0.82		68	91	101
5000	1.01		10	84	97	0.84		65	91	98

Tunable White

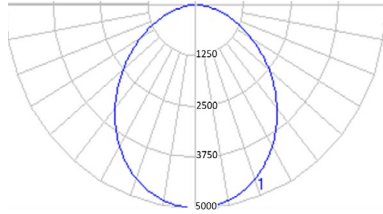| CCT	80 CRI					90 CRI				
	Lumen Factor	CRI	R9	Rf	Rg	Lumen Factor	CRI	R9	Rf	Rg
2700K	1.00	82	7	82	98	1.00	90	60	92	100
4000K		86	29	84	100			87	93	104
6500K		82	15	81	97			76	92	101

* Lumen values are based on 4000K, 80 CRI erformance.
See Lumen Multipliers below for other CCT or CRI perfomance data.

Project:	Catalog:	Type:
Notes:		

Photometric Performance

CRUo-2X4-LED840K120LUNV-DSA

Characteristics	
Luminaire Lumens	12096
Efficacy Rating	122
Total Luminaire Watts	99
Spacing Criterion (0-180)	1.2
Spacing Criterion (90-270)	1.18
Spacing Criterion (Diagonal)	1.3

Luminance Data (cd/sq.m)			
Degrees	0-Deg	45-Deg	90-Deg
45	5674	5695	5291
55	5043	4729	4612
65	4212	3863	3743
75	2972	2572	2543
85	896	1142	1458

Zonal Lumens	
Zone	Lumens
0-30	3747.51
0-40	6011.17
0-60	10073
0-90	12096
90-180	0

CRUo-2X2-LED840K070LUNV-DSA

Characteristics	
Luminaire Lumens	7035
Efficacy Rating	108
Total Luminaire Watts	65
Spacing Criterion (0-180)	1.2
Spacing Criterion (90-270)	1.18
Spacing Criterion (Diagonal)	1.3

Luminance Data (cd/sq.m)			
Degrees	0-Deg	45-Deg	90-Deg
45	6551	6397	6399
55	5884	5702	5685
65	4956	4722	4700
75	3437	3148	3269
85	1130	1443	1988

Zonal Lumens	
Zone	Lumens
0-30	2161
0-40	3468
0-60	5845
0-90	7035
90-180	0

CRUo-1x4-LED840K055LUNV-DSA

Characteristics	
Luminaire Lumens	5538
Efficacy Rating	109
Total Luminaire Watts	51
Spacing Criterion (0-180)	1.2
Spacing Criterion (90-270)	1.2
Spacing Criterion (Diagonal)	1.28
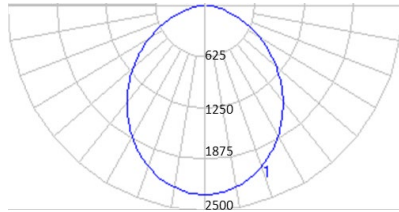
Luminance Data (cd/sq.m)			
Degrees	0-Deg	45-Deg	90-Deg
45	6551	6397	6399
55	5884	5702	5685
65	4956	4722	4700
75	3437	3148	3269
85	1130	1443	1988

Zonal Lumens	
Zone	Lumens
0-30	1720
0-40	2751
0-60	4613
0-90	5538
90-180	0

Lumen Maintenance
White LED Performance

TM21
Projection Limit
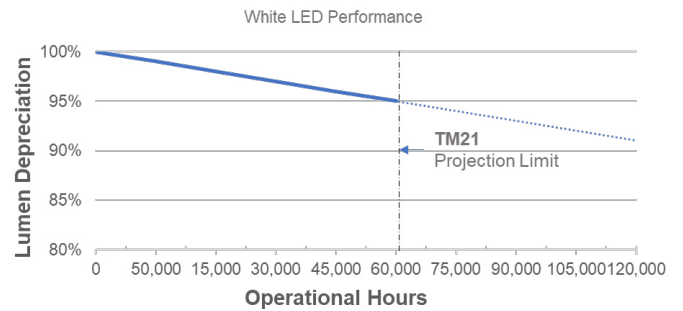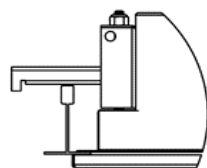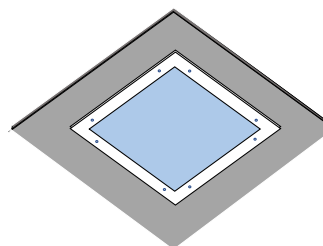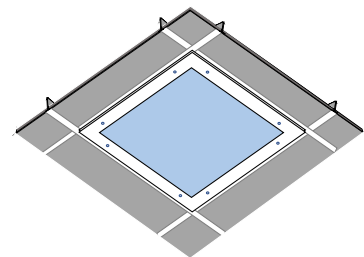
Installation Details
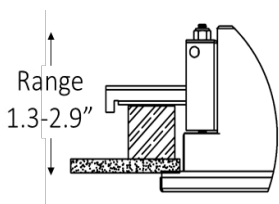
Overlapping Door Flanged (Framing by others)

Overlapping Door in Grid Ceiling

Overlapping Door Flanged

Overlapping Door in Grid Ceiling

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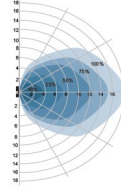| Project:	Catalog:	Type:
Notes:		

V68 Microwave Occupancy Sensor

Description
- Dip Switch Settable step dim levels, hold-off and standby times, and daylight hold off level
- 120-277VAC Operating voltage
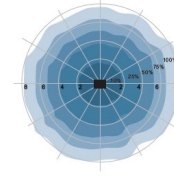- Ideal for use in cleanrooms and vandal resistant fixtures

Detection Range
- Diamter*Height: 12m*6m Max

Wall mounting pattern (Unit: m)
Suggested installation height: 1-1.8m

Ceiling mounting pattern (Unit: m)
Suggested installation height: 2.5-

Specifications

Input V	120-277 VAC
Operating Frequency	50/60 Hz
Dimming Load	0-10V Dimming Control
	Sinks <20mA
Operating Temperature	-35C to 55C
Programming	Dip Switch Settable

Max Mounting Height	40ft
Load Rating	400 VA @ 120 VAC
	800 VA @ 220-240 VAC
	1000 VA @ 277 VAC
Power Consumption	<0.5W (standby); <1W (operation)
Motion Detection	0.5 to 3m/w
Ratings	UL Listed

Programming
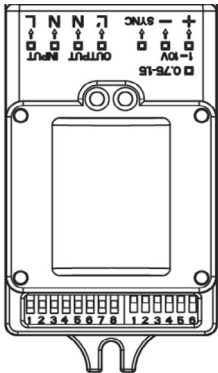
Detection Area

ON		1	2	
	I	ON	ON	100%
	II	ON	-	75%
	III	-	ON	50%
	IV	-	-	10%

Hold Off Time

ON		3	4	5	
	I	ON	ON	ON	5s
	II	-	ON	ON	30s
	III	ON	-	ON	90s
	IV	-	-	ON	3min
	V	ON	ON	-	20min
	VI	-	-	-	30min

Standby Time

ON		6	7	8	
	I	ON	ON	ON	0s
	II	-	ON	ON	5s
	III	ON	-	ON	5min
	IV	-	-	ON	10min
	V	ON	ON	-	30min
	VI	-	ON	-	1h
	VII	-	-	-	+∞

Daylight Level

ON		1	2	3	4	
	I	-	-	ON	ON	2Lux
	II	-	-	-	ON	5Lux
	III	-	ON	ON	-	10Lux
	IV	-	-	ON	-	25Lux
	V	-	ON	-	-	50Lux
	VI	ON	-	-	-	100Lux
	VII	-	-	-	-	Disable

Standby Level

ON		5	6	
	I	ON	ON	50%
	II	-	ON	30%
	III	ON	-	20%
	IV	-	-	10%

Wiring Diagram: